

WATSON MILL BRIDGE

(Broad River Bridge)

National Covered Bridges Recording Project

Spanning South Fork Broad River, Watson Mill Road, Watson Mill Bridge State
Park

Comer vicinity

Madison County

Georgia

HAER No. GA-140

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service

U.S. Department of the Interior

1849 C St. NW

Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

WATSON MILL BRIDGE (Broad River Bridge)

HAER No. GA-140

LOCATION: Spanning South Fork Broad River at Watson Mill Road, Watson Mill Bridge State Park, Comer vicinity, Madison County, Georgia
UTM: 17.314487.3767491, Carlton, Georgia, Quadrangle

STRUCTURAL
TYPE: Wood covered bridge, Town lattice truss

DATE OF
CONSTRUCTION: 1885

DESIGNER/
BUILDER: Washington W. King

PRESENT OWNER: Georgia Department of Natural Resources

PREVIOUS USE: Vehicular bridge

PRESENT USE: Vehicular bridge

SIGNIFICANCE: The Watson Mill Bridge is the longest of sixteen surviving covered bridges in the state of Georgia, and one of four surviving covered bridges attributed to Washington W. King, son of prominent bridge builder and former slave Horace King. The bridge has been restored as the focal point of the Watson Mill Bridge State Park.

HISTORIAN: Researched and written by Lola Bennett, March 2003.

PROJECT
INFORMATION: The National Covered Bridges Recording Project is part of the Historic American Engineering Record (HAER), a long-range program to document historically significant engineering and industrial works in the United States. HAER is administered by the Historic American Buildings Survey/Historic American Engineering Record, a division of the National Park Service, U.S. Department of the Interior. The Federal Highway Administration funded the project.

Chronology

- 1807 Horace King born to Edmund and Susan King, slaves of Edward King, at Cheraw, South Carolina
- 1820 Ithiel Town (1784-1844) patents the Town lattice truss
- 1824 Ithiel Town supervises construction of PeeDee River Bridge at Cheraw, South Carolina
- 1828 PeeDee River Bridge is rebuilt after being washed away in 1826¹
- 1830 Edward King dies; John Godwin (1798-1859) purchases Horace King, his mother and siblings
- 1832 John Godwin and Horace King build Chattahoochee River Bridge at Columbus, Georgia
- 1839 Horace King marries Frances L. Thomas (1825-1864)
- 1842 Horace King superintends construction of the Columbus Bridge at Columbus, Mississippi
- 1843 Birth of Horace King's first son, Washington W. King
- 1846 Horace King freed by the Alabama State Legislature
- 1847 Present-day Watson Mill Road and crossing appear on William Bonner's map of Georgia
- 1849 Horace King repairs the Alabama State Capitol after it burns
- 1859 John Godwin dies; Horace King erects a monument on his grave at Phenix City
- 1864 Horace King's wife, Frances, dies
- 1869 Horace King elected to Alabama State Legislature
- 1872 King family moves to LaGrange, Georgia
- 1875 Washington W. King moves to Atlanta
- 1879 Marshall King dies

¹ Rev. Francis Cherry's 1885 *History of Opelika* states that the first bridge Horace King worked on spanned the Pee Dee River in South Carolina. From this information, some modern writers have concluded that Horace King and John Godwin learned covered bridge building directly from architect Ithiel Town. According to Lupold and French, detailed records of the PeeDee River Bridge contain no evidence that either King or Godwin worked on the bridge, but they *may* have worked on its replacement in 1828, and in this capacity become acquainted.

- 1885 Horace King dies at LaGrange, Georgia
- 1885 Washington W. King builds Watson Mill Bridge
- 1888 City of LaGrange names King Street in honor Horace King and his son Marshal
- 1899 George King dies
- 1910 Washington King dies
- 1913 Ernest King becomes the third generation of his family to work on the Fort Gaines Bridge
- 1926 John T. King dies
- 1978 Horace King's gravesite discovered and marked by Ocfuskee Historical Society
- 1979 Horace King inducted into the Alabama Engineering Hall of Fame
- 2003 Watson Mill Bridge recorded by the Historic American Engineering Record

Description

The Watson Mill Bridge is a three-span Town lattice truss covered bridge on heavily mortared rubble stone piers (one concrete pier was added in the 1930s). The bridge is located upstream of a nineteenth century dam that powered a grist and saw mill, and later a hydroelectric plant, at this site. The bridge is 229' long and 18'-6" wide, with a 16' roadway. The spans measure 62', 63', and 65'. There is a short stringer approach span at each end, seated on concrete abutments.

The trusses are framed in the manner patented by Ithiel Town in 1820 and modified in 1835. The upper and lower chords are paired 2½ x12" planks. There are secondary upper and lower chords of paired 2½ x10" planks. The primary upper and lower chords sandwich a lattice web of overlapping 3"x10" planks fastened with two 2-inch diameter treenails at each intersection. The trusses are 14'-6" high.

The lower chords rest on 7"x13" timber bolster beams on the piers and 12"x12" steel bolster beams on the abutments. There are sixty-five 5"x14" deck beams seated transversely on the lower chords. There are eleven lines of stringers, spaced 1'-6" apart on top of the deck beams. The deck is 3"x8" planks spaced 1" apart; two lines of four variable-width planks serve as running boards.

Overhead bracing consists of 6"x9" tie beams that are notched and seated on the upper chord. There is lateral 4"x4" cross bracing between the tie beams. There are collar ties and sway bracing between the tie beams or upper chord and the upper portion of the gable roof. The outer ends of the rafters rest on the upper chord and angle up to meet at the ridge. The rafters are approximately 2"x6", except for the ones next to the tie beams, which are approximately 4"x4". Longitudinal 1"x4" purlins are spaced about 8" apart on the rafters. Cedar shingles are nailed to the purlins. The roof overhangs about 1' at the eaves.

The bridge is clad in rough-sawn board-and-batten siding that is fastened to the outside of the chords and a longitudinal 2"x5" nailer mid-height of the truss. The center span has one window opening on the east side and two on the west side. The portals are straight with hipped openings. There is a sign over each portal bearing the inscription: "Watson Mill Bridge, Est. 1885."

Georgia Covered Bridges

John Godwin and Horace King built Georgia's first known covered bridge in 1832 over the Chattahoochee River at Columbus. It was a Town lattice truss, a type that was used for many of the estimated 250 covered bridges built in Georgia during the nineteenth century.² Presumably, many covered bridges did not survive the Civil War, and many others were lost to floods, vandalism, neglect and replacement. In 1955, the Georgia State Highway Department

² Thomas L. French and Edward L. French, *Covered Bridges of Georgia* (Columbus: Frencos Company, 1984), p. 35.

inventoried their remaining covered bridges and came up with a list of seventy-seven.³ Still, the losses continued, and by 1971 there were only twenty-three remaining.⁴ Today, Georgia has sixteen covered bridges.⁵

History of Bridge and Site

In 1798 a grist mill was established on the south fork of Broad River, about one mile downstream from the present covered bridge. There were other shops in the small industrial hamlet around the mill site. Gabriel Watson acquired the property near the present bridge in 1871 and subsequently erected a saw mill, grist mill, cotton gin, community store and a large residence. Initially, residents forded the river at the shoals. Later, a rope ferry was used. By the 1880s, however, there was enough traffic to warrant a bridge.

Washington W. King of Atlanta built the present covered bridge in 1885 for the sum of \$3,228.00, which included all materials. On May 5, 1885, the Oglethorpe County Commissioners inspected the bridge and found it to have been completed in accordance with the original plan and specifications, but with approaches and siding even better than in the specifications.

In 1904 a fire destroyed Watson's house. Frank Edwards purchased the property in 1907 for development of a hydroelectric plant to power the Jefferson Textile Mills in Crawford, Georgia. This use of the site continued until the Georgia Power Company purchased it in 1953. The plant was closed the following year and stripped for scrap.⁶ The property then sat idle until 1971, when the owners donated it to the state. Watson Mill Bridge State Park opened to the public two years later. To date, 1,000 acres of land have been developed for camping, fishing, hiking, picnicking, canoeing, biking and horseback riding, but the covered bridge remains the central feature and carries a heavy volume of traffic through the park.

Washington W. King

Washington W. King (1843-1910) was the eldest of five children of Horace King, one of the South's most prolific and respected covered bridge builders. King's sons worked with their father and became excellent bridge builders in their own right. After the Civil War, the King family moved to LaGrange, Georgia, where brothers John and George contracted for buildings and bridges in and around Troup County. In 1875, Washington King moved to Atlanta and set up his own construction business there. He built a number of covered bridges in Alabama and

³ State Highway Department of Georgia, "Covered Bridges in Georgia," May 20, 1955.

⁴ "Georgia's Kissing Bridges," *The Sunday Ledger-Enquirer* (Columbus, Georgia), November 14, 1971.

⁵ Fourteen of these have reported construction dates ranging from c.1840 to 1906. The remaining two were built in 1975 and 1995.

⁶ The foundations, dam and canals are still an integral part of the site.

Georgia, four of which survive.⁷ Washington's King's son Ernest became the third generation of the King family to enter the bridge-building business, which he continued into the 1920s.

Ithiel Town and the Town Lattice Truss

Ithiel Town was born in Thompson, Connecticut in 1784 and died in New Haven in 1844. As a young man he learned carpentry and studied architecture at Asher Benjamin's school in Boston. From 1829 to 1835, Town was a partner in the New York City firm of Town & Davis. For most of his life, Town practiced architecture and designed a number of noteworthy buildings, including Christ Church in Hartford (1825), the New York City Custom House (1837), the North Carolina State Capitol in Raleigh (1841), the Yale College Library (1842), and the Virginia State Capitol at Richmond (1842). Although he is primarily recognized as an architect, Town also made a significant contribution to the field of engineering when, in 1820, he was granted a patent for a lattice truss bridge. In 1820, Eli Whitney wrote to Town regarding this innovative design:

It appears to me to be much lighter, in proportion to its strength, than any other wooden bridge which I have seen; a consideration of much importance, both as respects expense, and the greater ease with which it supports its own weight. ...On the whole, its simplicity, lightness, strength, cheapness and durability, are, in my opinion, such as to render it highly worthy of attention.⁸

Town's truss had parallel chords connected by a lattice web of overlapping planks pinned together at opposing angles. By eliminating complex joinery and using common sawn planks instead of hewn timbers, Town anticipated this method of bridge construction to be "the most simple, permanent, and economical, both in erecting and repairing."⁹ Unlike panel trusses, the lattice truss functioned as an integral unit, much like a series of overlapping triangles. A load applied to one part of the structure was transferred to other parts of the structure via the pins at each lattice intersection.¹⁰

Town received a second patent in 1835, adding a second lattice web, which was used primarily for railroad bridges. Town built only a few bridges himself, but aggressively promoted his truss design through agents who sold the rights to use his patent at \$1 per foot of bridge. It is said that Town actually derived more income from his engineering work than from his architectural practice.¹¹ Its popularity was based on the a number of factors: it used small, reasonably sized lumber; it required a minimal amount of intricate framing, allowing it to be easily erected by

⁷ Watson Mill Bridge, built 1885 near Comer, Georgia; Euharlee Bridge, built 1886 at Cartersville, Georgia, Effie's Bridge (Stone Mountain Park Bridge), built 1891 at Athens, Georgia, moved to Stone Mountain Park in 1965; and Big Cloud Creek Bridge, built 1905 at Lexington, Georgia.

⁸ Eli Whitney, letter to Ithiel Town, December 26, 1820. Ithiel Town papers, Yale University Library, New Haven, Connecticut.

⁹ Ithiel Town, "A Description of Ithiel Town's Improvement in the Construction of Wood and Iron Bridges: Intended as a General System of Bridge-Building," (New Haven: S. Converse, 1821), p.4.

¹⁰ Richard Sanders Allen, *Covered Bridges of the Northeast* (Brattleboro: Stephen Greene Press, 1957), p.15.

¹¹ Henry F. Withey and Elsie Rathburn Withey, "Ithiel Town," biographical sketch in *Biographical Dictionary of American Architects (Deceased)* (Detroit: Omnigraphics, 1970), p.604.

local unskilled labor; it could span up to 200'; and it showed stress long before collapse would occur.¹² Thousands of Town lattice trusses were built in the United States in the nineteenth century, and the Town lattice system continued to be used well into the twentieth century. There are about 150 surviving Town lattice truss covered bridge in the United States. While the majority are located in the Northeast, ten of Georgia's surviving covered bridges are of Town lattice construction.¹³

¹² Brenda Krekeler, *Covered Bridges Today* (Canton, Ohio: Daring Books, 1988), p. 19.

¹³ The Town lattice's popularity in Georgia may very well have resulted from Ithiel Town's personal involvement with a number of high-profile architectural and bridge building projects in adjoining states.

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